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PSEG
Nuclear LLC

APR 0 8 2015

LR-N15-0052

10 CFR 50.73

U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, DC 20555-0001

Salem Nuclear Generating Station Unit 1
Renewed Facility Operating License No. DPR-70
NRC Docket No. 50-272

SUBJECT: Licensee Event Report 272/2014-006-001

REFERENCE: PSEG Letter LR-N14-0256 dated December 16, 2014
Licensee Event Report 272/2014-006

The Licensee Event Report (LER), 272/2014-006-001, "Manual Reactor Trip Due to Main Power Transformer Low Oil Level" is being submitted in accordance with the requirements of 10 CFR 50.73(a)(2)(iv)(A), "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)..." The Reference LER stated that Salem Nuclear Generating Station would submit a supplement to the LER with the results of the causal evaluation performed for the event. The results of the causal evaluation are being communicated in the LER supplement attached to this letter.

Should you have any questions or comments regarding the submittal, please contact David Lafleur of Salem Regulatory Assurance at 856-339-1754.

There are no regulatory commitments contained in this letter.

Sincerely,

John F. Perry
Site Vice President – Salem

Attachments (1)

cc Mr. D. Dorman, Administrator – Region 1, NRC
Ms. C. Sanders, Licensing Project Manager – Salem, NRC
Mr. P. Finney, USNRC Senior Resident Inspector, Salem (X24)
Mr. P. Mulligan, Manager IV, NJBNE
Mr. R. Braun, President and Chief Nuclear Officer – Nuclear
Mr. T. Cachaza, Salem Commitment Tracking Coordinator
Mr. L. Marabella, Corporate Commitment Tracking Coordinator
Mr. D. Lafleur, Salem Regulatory Assurance

NRC FORM 366 (01-2014) U.S. NUCLEAR REGULATORY COMMISSION

APPROVED BY OMB: NO. 3150-0104 EXPIRES: 01/31/2017

Estimated burden per response to comply with this mandatory collection request: 80 hours. Reported lessons learned are incorporated into the licensing process and fed back to industry. Send comments regarding burden estimate to the FOIA, Privacy and Information Collections Branch (T-5 F53), U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, or by internet e-mail to infocollects.Resource@nrc.gov, and to the Desk Officer, Office of Information and Regulatory Affairs, NEOB-10202, (3150-0104), Office of Management and Budget, Washington, DC 20503. If a means used to impose an information collection does not display a currently valid OMB control number, the NRC may not conduct or sponsor, and a person is not required to respond to, the information collection.

LICENSEE EVENT REPORT (LER)

(See Page 2 for required number of digits/characters for each block)

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4. TITLE Manual Reactor Trip Due to Main Power Transformer Low Oil Level

5. EVENT DATE			6. LER NUMBER			7. REPORT DATE			8. OTHER FACILITIES INVOLVED	
MONTH	DAY	YEAR	YEAR	SEQUENTIAL NUMBER	REV NO.	MONTH	DAY	YEAR	FACILITY NAME	DOCKET NUMBER 05000
10	19	2014	2014	- 006	- 001	04	08	2015	FACILITY NAME	DOCKET NUMBER 05000

9. OPERATING MODE	11. THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR §: (Check all that apply)			
1	☐ 20.2201(b)	☐ 20.2203(a)(3)(i)	☐ 50.73(a)(2)(i)(C)	☐ 50.73(a)(2)(vii)
	☐ 20.2201(d)	☐ 20.2203(a)(3)(ii)	☐ 50.73(a)(2)(ii)(A)	☐ 50.73(a)(2)(viii)(A)
10. POWER LEVEL	☐ 20.2203(a)(1)	☐ 20.2203(a)(4)	☐ 50.73(a)(2)(ii)(B)	☐ 50.73(a)(2)(viii)(B)
	☐ 20.2203(a)(2)(i)	☐ 50.36(c)(1)(i)(A)	☐ 50.73(a)(2)(iii)	☐ 50.73(a)(2)(ix)(A)
20%	☐ 20.2203(a)(2)(ii)	☐ 50.36(c)(1)(ii)(A)	☒ 50.73(a)(2)(iv)(A)	☐ 50.73(a)(2)(x)
	☐ 20.2203(a)(2)(iii)	☐ 50.36(c)(2)	☐ 50.73(a)(2)(v)(A)	☐ 73.71(a)(4)
	☐ 20.2203(a)(2)(iv)	☐ 50.46(a)(3)(ii)	☐ 50.73(a)(2)(v)(B)	☐ 73.71(a)(5)
	☐ 20.2203(a)(2)(v)	☐ 50.73(a)(2)(i)(A)	☐ 50.73(a)(2)(v)(C)	☐ OTHER
	☐ 20.2203(a)(2)(vi)	☐ 50.73(a)(2)(i)(B)	☐ 50.73(a)(2)(v)(D)	Specify in Abstract below or in NRC Form 366A

12. LICENSEE CONTACT FOR THIS LER

FACILITY NAME	TELEPHONE NUMER (Include Area Code)
David Lafleur, Senior Compliance Engineer, Salem Regulatory Assurance	(856) 339-1754

13. COMPLETE ONE LINE FOR EACH COMPONENT FAILURE DESCRIBED IN THIS REPORT

CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX	CAUSE	SYSTEM	COMPONENT	MANU-FACTURER	REPORTABLE TO EPIX
A	-	-	-	-					

14. SUPPLEMENTAL REPORT EXPECTED	15. EXPECTED SUBMISSION DATE	MONTH	DAY	YEAR
☐ YES (If yes, complete 15. EXPECTED SUBMISSION DATE) ☒ NO				

ABSTRACT (Limit to 1400 spaces, i.e., approximately 15 single-spaced typewritten lines)

On October 19, 2014, at 2051, while performing a unit shutdown in preparation for its twenty-third refueling outage, Salem unit 1 control room operators initiated a manual reactor trip at approximately 20 percent reactor power. The manual reactor trip was inserted due to concerns with the 1B Main Power Transformer, which had been in service with identified oil leakage. All control rods fully inserted on the trip. The auxiliary feedwater system actuated as designed in response to low steam generator levels. Decay heat removal was via the steam dumps to the main condenser. The plant was stabilized in Hot Standby.

Operators failed to recognize parameters on 1B Main Power Transformer which would have required them to enter an Adverse Condition Monitoring Plan. Entry into the plan would have required them to perform a fast load reduction and remove the main turbine from service at 40 percent power. Salem Generating Station will fully integrate procedure use and adherence principles and behaviors throughout Operations.

This report is made in accordance with 10 CFR 50.73 (a)(2)(iv)(A), "Any event or condition that resulted in manual or automatic actuation of any of the systems listed in paragraph (a)(2)(iv)(B)..." for a manual reactor trip and for automatic actuation of the auxiliary feedwater system.

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NARRATIVE

PLANT AND SYSTEM IDENTIFICATION

Westinghouse - Pressurized Water Reactor {PWR/4}
Main Power Transformer {EL}
Auxiliary Feedwater System {BA}
Steam Generator {AB/SG}

Energy Industry Identification System (EIIS) codes and component function identifier codes appear as {SS/CCC}.

IDENTIFICATION OF OCCURRENCE

Event Date: October 19, 2014

Discovery Date: October 19, 2014

CONDITIONS PRIOR TO OCCURRENCE

Salem Unit 1 was in operational Mode 1, performing a unit shutdown in preparation for its twenty-third refueling outage. No additional structures, systems or components were inoperable at the time of discovery that contributed to this event.

DESCRIPTION OF OCCURRENCE

On October 19, 2014, at 1500, Salem Unit 1 commenced a power reduction to Hot Standby in preparation for a scheduled refueling outage.

At 1810, control room operators received a phase 2 Main Power Transformer (MPT){EL} trouble overhead annunciator. Local annunciation on the 1B MPT panel indicated a low oil level condition in the 1B MPT.

At 2027, operators entered the rapid load reduction procedure increasing power reduction rate from 20 percent per hour to 1 percent per minute.

At 2048, the 1B MPT trouble overhead annunciator reflashed. Local transformer annunciation indicated gas detection in the 1B MPT.

At 2051, at approximately 20 percent power, a manual reactor trip was initiated. All control rods fully inserted on the trip. All three auxiliary feedwater (AFW) pumps {BA/P} started as designed in response

to low Steam Generator (SG) {AB/SG} levels and decay heat was removed by the steam dumps to the main condenser. Operators entered the emergency operating procedures for the reactor trip and stabilized the plant in Hot Standby (Mode 3).

An eight hour NRC Emergency Notification System (ENS) notification was made on October 20, 2014 at 0136 under the requirements of 10 CFR 50.72(b)(3)(iv)(A), for automatic actuation of the AFW system. An update to this notification made on November 24, 2014, at 1555, stated that the manual reactor trip met the criteria for four hour reporting in accordance with 10 CFR 50.72(b)(2)(iv)(B), "Any event or condition that results in actuation of the reactor protection system (RPS) when the reactor is critical..."

CAUSE OF EVENT

The cause of the unplanned manual reactor trip is attributed to weaknesses in behaviors and practices of Procedure Use and Adherence (PU&A) by the operating crew. Operators failed to recognize parameters on 1B MPT which would have required them to enter an Adverse Condition Monitoring Plan. The Adverse Condition Monitoring Plan would have required them to initiate a fast load reduction and remove the main turbine from service at 40 percent power. Operators continued with a normal shutdown, then transitioned to their rapid load reduction procedure. Plant conditions were met in the rapid load reduction procedure to trip the turbine but a turbine trip was not performed. Operators manually tripped the reactor and transitioned from the rapid load reduction procedure to the emergency operating procedures.

The AFW pumps automatically started as designed on the unit trip due to low (14% Narrow Range) SG levels experienced after the reactor trip.

SAFETY CONSEQUENCES AND IMPLICATIONS

There were no safety consequences associated with this event. Operators responded appropriately to the manual reactor trip. All plant systems operated as designed.

SAFETY SYSTEM FUNCTIONAL FAILURE

A review of this event determined that a Safety System Functional Failure (SSFF) as defined in Nuclear Energy Institute (NEI) 99-02, Regulatory Assessment Performance Indicator Guideline, did not occur. This event did not prevent the ability of a system to fulfill its safety function to either shutdown the reactor, remove residual heat, control the release of radioactive material, or mitigate the consequences of an accident.

PREVIOUS OCCURRENCES

A review of Salem Unit 1 and 2 Licensee Event Reports for the previous three years identified no other similar manual reactor trip events.

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NARRATIVE

CORRECTIVE ACTIONS

1. The 1B MPT leak was repaired and tested satisfactorily during the 1R23 refueling outage.
2. A causal evaluation was performed to address the causes of this event.
3. Training and Operations will benchmark, implement and reinforce new PU&A standards and practices for Operations based on best industry criterion.
4. Analysis and training will be performed to address weaknesses in application of 10 CFR 50.72 reportability requirements for licensed operators and Regulatory Assurance personnel.

COMMITMENTS

This LER contains no regulatory commitments.